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ATTACHMENT IV

PROPOSAL FOR UPGRADED COINS COMMUNICATION SUPPORT

BACKGROUND

The Community On-Line Intelligence System (COINS) is a secure network connecting several major on-line computer information systems. At the present time, host computers at NSA, DIA, NPIC, and CONAD are interconnected through a computer switch. By means of remote teletype terminals, users from these agencies and those from CIA, the State Department, PACOM and the intelligence staffs of the Service headquarters are able to interrogate certain files of the other agencies in a batch processing mode of operation.

A recent ASD(I) review of COINS for the IRAC pinpointed several weaknesses. Many of these have been eliminated already, or are in the process of being addressed in depth. For example, the network security classification has been upgraded to TK vice SI. Additionally, the entire data base is in the process of being scrutinized and significant improvements have been made.

Technical weaknesses in COINS which that review also noted are in the network configuration and the communications aspects of the system. The network is presently interconnected by means of voice-grade lines (300 characters/second) in a "star" configuration (each host computer connected to a store-and-forward switch--in this case, an IBM 360/30 computer). The lines do not have sufficient capacity for interactive access on high speed terminals. The switch represents a single point-of-failure and is also a stumbling block in the path of growth toward an interactive capability and the need to put the host computers of other using agencies on-line.

This proposal is intended to correct these deficiencies, by upgrading the network communications of COINS. It represents the first step in the development of an integrated, worldwide computer support system for intelligence requirements.

PROPOSED NETWORK

The proposed COINS communications network replaces the present store-and-forward switch and voice-grade communication circuits with

an advanced and expandable network concept using high-speed lines (6000 characters/second). The new network is based upon the proven technology and operational hardware and software of the ARPANET. Each COINS host will be capable of being inter-connected with each other host through at least two paths. Communication between hosts will be purely a function of network equipment, relieving the host computers of this burden. Additionally, the network will be able to service high-speed terminals, allowing for the gradual replacement of the present, slower teletype terminals by CRT's and printers.

Initially the network will service the current host computers. The improvements will be obtained by configuring the network with mini computers called variously Interface Message Processors (IMPs), Terminal Interface Processors (TIPs) or Interactive Analyst Stations (IASs) depending on the required capability at each node. These mini computers will be connected by high speed digital lines and will handle all network communication and routing functions.

The proposed COINS network will modify the current host sites as follows:

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NPIC: Add an IMP to connect the UNIVAC 494 and its COINS files to the network.

DIA - Arlington Hall: Add an IMP and an IDHS Interactive Analyst Station (IAS). The IAS connects the two present GE-635s and COINS files to the network. A Network Control function is provided, and is used for monitoring and reporting of IDHSC activity.

DIA - Pentagon: Add an IMP and an IAS. The IAS connects a Honeywell 6050 to the network.

Communications within the COINS network will be provided by T1 channels where possible. For reliability, each site has communications access to at least two other sites via independent communications lines. T1 lines will be added as required.

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The present COINS users of the IDHSC network include the following sites and equipments which are under the IDHS program:

CONAD: Contains an IAS which is the switching node and interface for an IBM 360/40.

PACOM: Contains an IAS which is the switching node and interface for an IBM 360/40 and an IBM 360/50.

INTERFACES

The Intelligence Data Handling System Communications (IDHSC) network is the communications system needed to internet the Defense Intelligence Agency (DIA), the Unified and Specified Commands, and the other intelligence components of the Military Departments. The IDHSC centers are to be internetted by a communication system capable of supporting bulk data transmission, remote batch and interactive (conversational) operation. IDHSC will provide communications to interconnect indications and warning centers and IDHS production sites while providing for selected interfaces to the WWMCCS. IDHSC is and will remain fully compatible with COINS, which provides an interconnect capability between the pertinent intelligence community information storage and retrieval systems and networks.

DEVELOPMENT TASKS

Implementation of the proposed network requires assemblage of the following types of components:

New communications lines, COMSEC and termination equipment

Computers for use as data switching nodes (IMP, TIP, IAS) and Network Control Center

Interfaces between data switching nodes and host computers

Communications software; i.e., computer programs for the switching nodes, Network Control Centers, and host computers.

Many of the needed components are available off-the-shelf from commercial organizations. Development tasks are confined to:

Installation and checkout of vendor equipment

Development of interfaces between host computers and switching nodes

Development of software for the IAS based IDHSC network.

IMPLEMENTATION PLAN

Implementation of this plan is expected to take place over a 12 month period. The first site completed will be NSA. Successive sites will follow as soon as satisfactory operation has been achieved.

FISCAL PLAN

The fiscal plan for FY 74 and 75 includes all costs for the proposed COINS communication network as well as COINS program management costs and R&D programs for system monitoring and multi-level security.

(in thousands)

	FY 74	FY 75
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